

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6775397 (Hamalainen) in view of U.S. Patent No. 5202928 (Tomita et al).

Regarding claim 1, Hamalainen discloses a method for classifying an object using a stereo camera, comprising: generating a first image with a first video sensor (fig. 6, step 32, fig. 1, item 14a); generating a second image with a second video sensor (fig. 6, step 32, fig. 1, item 16a, col. 4, lines 7-9); and in order to classify the object as belonging to the user's profile or not (fig. 6, step 40), finding a 3D model from the first and second image in specifiable areas surrounding pixel coordinates, the specifiable areas being the feature areas having data points (col. 4, lines 15-25), using such a method as Tomita et al (col. 4, line 23) the pixel coordinates for at least one model being available, the pixel coordinates of the stored profile that is matched to the pixel coordinates of the 3D model (col. 4, lines 36-38), at least one position being available, the position of the coordinates in the 3D model developed in the process shown in col. 4, lines 15-25.

Hamalainen does not disclose expressly that the finding a 3D model from the first and second image in specifiable areas surrounding pixel coordinates is done by comparing the first image and the second image with one another in specifiable areas surrounding corresponding pixel coordinates and at least one distance from the stereo camera is available. Hamalainen does disclose using the method of Tomita to form the 3D model.

Tomita et al discloses finding a 3D model from the first and second image in specifiable areas surrounding pixel coordinates is done by comparing the first image and the second image with one another in specifiable areas surrounding corresponding pixel coordinates, i.e. the specifiable areas being any area that a coordinate is being found (fig. 3, s3-s5) that are used in a comparison between the two images (fig. 3, s6), and that in calculating the 3D model, at least one distance from the stereo camera is available (fig. 2, coordinates are triangulated (col. 1, lines 18-20).

Hamalainen and Tomita et al are combinable because they are from the same field of endeavor, i.e. 3D modeling.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use triangulation/ comparison between images to form a 3D model.

The suggestion/motivation for doing so would have been to provide a more robust system by using a well-known method of forming a 3D model. Hamalainen even states using the method for forming the 3D model (col. 4, lines 22-23).

Therefore, it would have been obvious to combine the recognition of Hamalainen with the 3D modeling of Tomita et al to obtain the invention as specified in claim 6.

3. Regarding claim 7, Hamalainen discloses generating a quality index for each individual comparison, the texture indices that show how well texture matches (fig. 6, step 36, 38); and classifying the object as a function of the quality index (fig. 6, step 38, col. 4, lines 33-35).

4. Regarding claim 10, Hamalainen discloses the quality index is generated via correlation between the texture of the query and the profile (col. 4, lines 37-39).

5. Regarding claim 8, Hamalainen discloses generating models for at least two positions and distances relative to the stereo camera, since the models are generated for the two positions and distances of stereo cameras 14a and 16a of fig. 1.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamalainen in view of Tomita et al, as applied to claim 8 above, and further in view of U.S. Patent No. 6392648 (Florencia).

7. Regarding claim 9, Hamalainen (as modified by Tomita et al) discloses all of the claimed elements as set forth above and incorporated herein by reference.

Hamalainen (as modified by Tomita et al) does not disclose expressly models are stored in a look up table.

Florencia discloses 3D models are stored in a look up table (col. 5, lines 5-9).

Hamalainen (as modified by Tomita et al) & Florencia are combinable because they are from the same field of endeavor, i.e. 3D modeling.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to store the 3D model as a look up table.

The suggestion/motivation for doing so would have been to provide a more robust, user-friendly system by representing the model in a direct means. Therefore, it would have been obvious to combine Hamalainen (as modified by Tomita et al) with the look up table of Florenca to obtain the invention as specified in claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHLEEN Y. DULANEY whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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